

WHAT IS CLAIMED IS:

1. An apparatus for controlling a volume of noise in a mobile communication terminal, the mobile communication terminal establishing a voice call with a second mobile communication terminal to decode voice data received therefrom, the apparatus comprising:

a voice processor for decoding the received voice data according to a coding rate of the second mobile communication terminal and outputting the decoded voice signal at a volume variable under an external control; and

a controller for setting the output volume of the voice processor to a receiving volume preset by a user, receiving information about a decoding rate corresponding to the coding rate of the voice data from the voice processor, and controlling the output volume of the voice processor according to the received information.

2. The apparatus as set forth in claim 1, wherein the controller lowers the output volume of the voice processor in a silence period to such a volume that the user does not recognize the noise as white noise.

3. The apparatus as set forth in claim 1, wherein the controller receives the information about the decoding rate corresponding to the coding rate of the voice data from the voice processor, and, if the received information represents that the voice data belongs to a speech period, controls the output volume of the voice processor such that it becomes the receiving volume preset by the user.

4. An apparatus for controlling a volume of noise in a mobile communication terminal, the mobile communication terminal establishing a voice call with a second mobile communication terminal to decode voice data therefrom, the apparatus comprising:

a vocoder for decoding received voice data according to a coding rate of the second mobile communication terminal and outputting the decoded voice signal at a volume variable under an external control;

an amplifier for amplifying the output voice data of the vocoder; and

- 5 a controller for setting the output volume of the vocoder to a receiving volume preset by a user, receiving information about a decoding rate according to the coding rate of the voice data from the vocoder, and controlling the output volume of the vocoder according to the received information.

5. An apparatus for controlling a volume of noise in a mobile
10 communication terminal, the mobile communication terminal establishing a voice call with a second mobile communication terminal to decode voice data received therefrom, the apparatus comprising:

15 a vocoder for decoding the received voice data according to a coding rate of the second mobile communication terminal and outputting the decoded voice signal at a volume variable under an external control;

an amplifier for varying an amplification degree under the external control and outputting the voice signal from the vocoder at a volume corresponding to the varied amplification degree; and

- 20 a controller for setting the output volume of the vocoder to a receiving volume preset by a user, receiving information about a decoding rate according to the coding rate of the voice data from the vocoder, and controlling the output volumes of the vocoder and the amplifier according to the received information.

6. The apparatus as set forth in claim 5, wherein the amplifier includes an internal codec and an external codec.

7. The apparatus as set forth in claim 5, wherein the controller lowers the output volume of the vocoder in a silence period to such a volume that the user does not recognize the noise as white noise.

8. The apparatus as set forth in claim 5, wherein the controller receives the information about the decoding rate according to the coding rate of the voice data from the vocoder, and, if the received information represents that the voice data belongs to a speech period, controls the output volume of the vocoder such that it becomes the receiving volume preset by the user.

9. A method for controlling a volume of noise in a mobile communication terminal, the mobile communication terminal including a vocoder for detecting a decoding rate of voice data received after establishing a voice call and outputting a decoding rate detection signal, and an amplifier for amplifying an output signal from the vocoder, the method comprising the steps of:

- a) determining whether the decoding rate detection signal from the vocoder indicates that the decoding rate of the voice data is a predetermined rate; and
- b) outputting a volume control signal to the vocoder if the decoding rate of the voice data is the predetermined rate.

10. The method as set forth in claim 9, further comprising the step of controlling a volume of the voice data such that it becomes a receiving volume preset by a user if the decoding rate of the voice data is not the predetermined rate.

11. The method as set forth in claim 9, further comprising the step of recognizing the voice data as silence period data containing only the noise if the decoding rate is the predetermined rate, and providing the amplifier with a control signal to lower the volume of the noise.

12. The method as set forth in claim 11, wherein the control signal to lower the volume of the noise is provided to the amplifier to lower the volume of the noise to such a level that the user does not recognize the noise as white noise.

13. The method as set forth in claim 9, wherein the predetermined rate
5 is $1/8$.